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ABSTRACT

Learning disabled students in a 2 year community college received specialized instruction and practice in reading, writing, speaking, mathematics, and study skills. Pre- and posttest scores on the Wechsler Adult Intelligence Scale-Revised, the Wide Range Achievement Test, and the Peabody Individual Achievement Test revealed significant increases in reading, math, and spelling achievement after one semester. Findings were interpreted to support the effectiveness of specialized programs in serving learning disabled college students. (CL)

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A STUDY OF STUDENT PERFORMANCE IN THE LEARNING DISABILITIES PROGRAM AT MT. SAN ANTONIO COLLEGE

LEARNING THEORY

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ABSTRACT

The primary purpose of this paper was to determine if learning disabled students can achieve in an academic environment when placed in a specialized program. The students were referred to placement in the Learning Disabled Program by counselors, teachers and Rehabilitation Advisors. These students were all administered the Wechsler Adult Intelligence Scale - Revised, (WAIS-R), the Wide Range Achievement Test (WRAT), and the Pebody Individual Achievement Test (PIAT) by the Educational Psychologist to determine if a discrepancy was evidence between the students' intellectual abilities and their actual academic performance. Once the students were selected for the program they were all given pre and post tests on the WRAT and the PIAT. The results of this study tends to support the major hypothesis of this study which stated that students would make a statistically significant (.01) gain if placed in a specialized program designed to improve their academic skills. The recommendations that emerged from this study were that: (1) a similar study be replicated, using a larger norm; (2) that a more controlled study be made utilizing both normal and learning disabled students; (3) that a study be conducted with the learning disabled group to determine their cogitative styles; and (4) that a follow-up study be conducted with the learning disabled student, once he/she has been mainstreamed into regular classes.

INTRODUCTION

Mt. San Antonio College is a two-year community college which is one of over 106 community colleges in the California Community College System. All of California's Community Colleges operate on the open door policy which states that "Admission is open to all persons who are at least 18 years of age, have graduated from an accredited high school, or covered by special acts of law and can profit by the education offered". Because of this policy, the college has been plagued with the problem of what to do with the students who are learning disabled (L.D.). During the Spring semester of 1982, the Office of Special Programs embarked on the task of setting up a testing program and a curriculum to assess the problem of L.D. students. It was the primary purpose of this paper to determine if learning disabled students can achieve in an academic environment when placed in a specialized program. Through this study, we intended to strengthen our abilities to work with students who have been diagnosed as learning disabled and hopefully the open door will not be a revolving door for these students.

Review of Literature

A review of the present literature on L.D. students finds most of the writing geared towards elementary children with learning disabilities (Fielding 1977). This body of literature presents a wide range of studies in learning disabilities related to communicative disorders, motor control, dyslexic and developmental reading disorders (Ugland 1976). However, there

was a paucity of studies relative to the adults and community college students with learning disabilities. When one considers how these students are assessed and programs implemented, the studies significantly decrease.

The most recent field in education that has generated a significant amount of research has been learning disabilities. The literature on L.D. students at the college level was basically confined to areas such as remedial instruction, reading problems with dyslexic and programing developmental educational plans for L.D. students. However, the present body of literature does offer some evidence of studies in areas related to L.D. students at the community college level. A critical analysis of these studies suggest that they were general rather than specific in scope. One such study was developed by Herbert and Czerniejewski (1976). In their paper they described how a community college learning center provided remedial instruction to dyslexic and otherwise language handicapped adult students. The study further investigated program principles, personnel and instructional procedures, then defines the adult dyslexic and the language problems they encounter in college classes. A review of procedures for teaching phonetic and syllabication was also a part of the study. However, the study did not present statistical data and the methodology was questionable. Dannenhower (1972) prognosticates that the adult dyslexic can achieve at least minimal functional use of language. He recommends techniques for teaching L.D. students with specific language disabilities to read and write. A remedial method which teaches association of sound and symbols through a multisensory approach affording reinforcement for

visual, auditory, and kinesthetic memory is explained. Furthermore, he postulated that the recognition of the learner's dominant sensory modality and the importance of maintaining accepting attitudes toward adult dyslexics who have often had unpleasant school experiences is important. The study also gave consideration to class size, room arrangements and length of class periods. A position paper by Stalcup and Freeman (1980) on "Serving the Learning Disabled Student in the Community College" reveals that 7% of the community college population has some type of special education need. It also outlined steps taken in various schools to serve L.D. students and discusses some of the drawbacks of establishing and maintaining adequate programs and services.

Cant (1980), in a paper presented at the Canadian Community Colleges/Canadian Vocational Association Conference, gives some suggestions for developing Individualized Educational Programs for Adults (I.E.P.A.) for the L.D. student. Some of the components are developing an I.E.P.A. committee, building a referral process, learning diagnostic services, learning the role of the diagnostician and setting goals of the I.E.P.A.

In summary, a perusal of the leterature on L.D. students varies greatly in its dimension and is inconclusive. More important, the statistical treatment of the data is at best questionable. Therefore, the purpose of this study is to investigate if students who are placed in specialized programs can achieve academically at a level commensurate with their abilities.

Problem

This study was designed to determine if learning disabled students can achieve in an academic environment, if placed in a specialized program.

Limitation

This study was directly limited by a relatively small sample. It was further limited in that it was analyzing and treating only one population.

Hypothesis

It was hypothesized that students placed in the L.D. Program would show a statistical significant improvement in their academic skills.

Definition of Terms

For the purpose of this study these terms were defined as follows:

L.D. Program: The L.D. Program is designed to give concentrated instruction and practice in the basic skills of reading, writing, speaking, mathematics, and the development of more effective study skills.

Learning disabled: Is a condition where students evidence a discrepency between their inate skills and their actual academic abilities.

Office of Special Programs: The objective of this office is to develop counseling, tutorial, testing, recruitment, and other support services in order to identify, recruit, and retain persons who have language, social, economic, educational and physical handicaps.

PROCEDURE

The Process of Collecting Data

The data collected for this Study was based upon students qualifying for placement into the L.D. Program during the Spring semester of 1982. Students were referred for screening towards placement into the L.D. Program by counselors, teachers and by Rehabilitation Advisors. More specifically, all the students who qualified for placement into the L.D. Program, were administered a Wechsler Adult Intelligence Scale - Revised (WAIS-R), Wide Range Achievement Test (WRAT), and the Peabody Individual Achievement Test (PIAT), by the Educational Psychologist. These three tests were administered to determine if students evidence a discrepancy between their intellectual abilities and their actual academical performance. Once a student has been selected and placed into the Learning Disability Program, they were given pre and post tests on the WRAT and the PIAT. Each student placed into the L.D. Program received individualized and small group instruction from the Learning Disability Specialist. These identified students were also placed into special developmentally based programs to meet their specific academic needs, and were placed into specialized Reading, Math and Writing Skills Review classes. At the end of the semester, they were re-evaluated to determine their level of progress, and if a significant difference existed between their pre and post test scores.

Data Analysis

The data was treated via a t-Test to determine if significant difference existed between the pre and post test.

Charts and graphs were designed to provide a visual analysis of the data.

Results

All students enrolled into the L.D. Program were administered the WAIS-R, the WRAT and the PIAT test. Table 1 provides the WAIS-R analysis of entering students into the Learning Disability Center. The mean verbal IQ of all students was 90.57. Although the overall scores of learning disability students was ten points below the normal level, their verbal, performance, and full scale scores were all considered to be within the low normal range of intelligence. It is of some significance to note that this population of students display a relatively normal intellectual capacity, although academically they demonstrated some serious deficites. Furthermore, a standard deviation on the WAIS-R was somewhat smaller than the results demonstrated by the normal population. As Table 1 tends to suggest, the learning disability population consistently scored lower than the normal population (although within the normal range) on all measures of the WAIS-R.

One of the most significant pieces of data to emerge from the WAIS-R analysis was the range in scores demonstrated by the students evaluated. For instance, the range of the verbal sub test was 71 to 109, while on the performance test the range was 58 to 82, and on the full scale test the range was 72 to 99. The significance of this data is that, within the population of L.D. students, there is a great deal of diversity in their ability. Equally important, it was found that 50 percentile was 88.99 on L.D. students with 100 being the 50 percentile on the normal population.

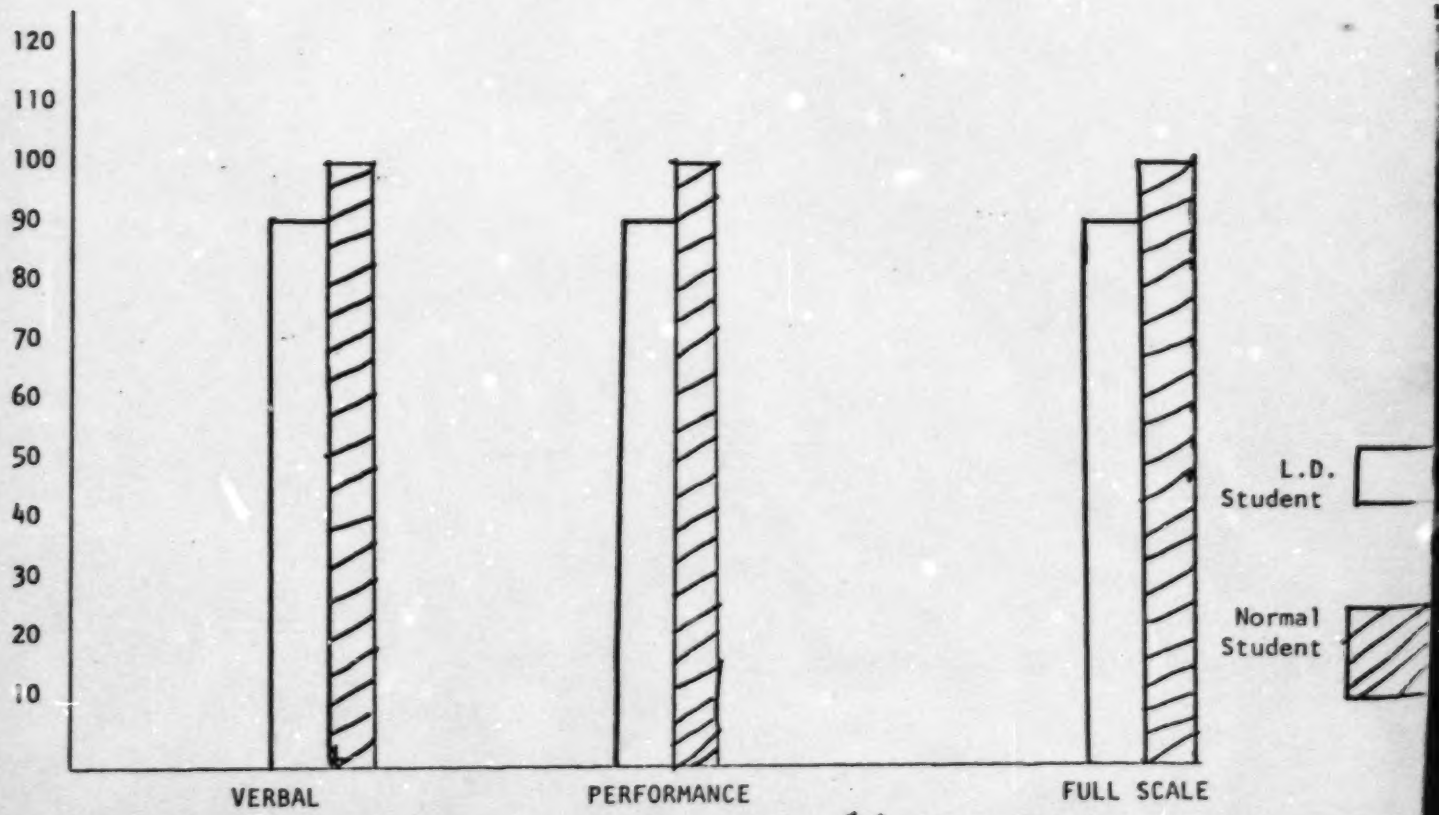
TABLE I

MEAN AND STANDARD DEVIATIONS OF INTELLIGENCE

QUOTIENTS FOR LEARNING DISABLED STUDENTS ON THE WAIS .

VERBAL		PERFORMANCE		FULL SCALE		NORMAL POPULATION
Mean	S.D.	Mean	S.D.	Mean	S.D	
90.71	14.72	91.17	12.28	90.57	12.53	100
Range 71 - 109		68 - 82		72 - 99		
25% Scored Below 78		25% Scored Below 82		25 - 75		100
50% Scored Below 88		50.9% Scorded Below 91		50.9 Scored Below 89		
75% Scored Below 102		77.2 Scored Below 100		73.7 Scored Below 99		100

N = 57



As stated previously, a pre-test experimental group design was used to assess the academic gains made by L.D. students. It should be noted that the time period between pre and post test was to be one semester, but because of the lateness of enrolling by some students into L.D. classes, there were slight variation in the length of time spent in the Program. That is, some students were allowed to enter after the fourth week of school. However, most of the students entered the Program during the first three weeks of the semester. In regards to the period of time between pre and post testing, the average time was about five instructional months. The standard deviation (S.D.) for this time period was approximately two months indicating a sizeable amount of variability in the amount of time students were in the Program as stated in Table 1.

Of significant importance in the analyzation of the data was the fact that the norm was significantly higher on the pre testing than on post tests. The varability of the norms were reflected in students who entered the Program, but failed to complete the entire semester. Table 2 provides the pre and post test data ascertained from L.D. students on the WRAT. These results suggest that students entered the Program reading at the 5.0 grade level, with the S.D. of 1.9. However, the post test results evidenced a reading score of 6.2, and a S.D. of 2.2, which suggests a 1.2 gain which proved to be a significant increase between the pre and post test at the .01 level. Similar findings were recorded in math, where the pre test results were at the 5.3 level, with the post-test results being 6.6 and a mean gain of 1.3, again evidencing an increase

TABLE II

MEANS, STANDARD DEVIATIONS AND "t" VALUES OF GRADE EQUIVALENTS FOR THE WIDE RANCE ACHIEVEMENT TEST FOR PRE AND POST MEASURES FOR L.D. STUDENTS

VARIABLE MEASURED	N	PRE-TEST		POST-TEST		GAIN		"t" VALUE	INSTRUCTIONAL MONTHS	
		MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION		MEAN	STANDARD DEVIATION
Reading	34	5.0	1.9	6.2	2.2	1.2	1.0	-6.52**	4.91	2.20
Arithmetic	30	5.3	1.9	6.6	1.9	1.3	1.3	- 5.23**	5.10	2.27
Spelling	41	(5.2) 14.80	7.64	(6.1) 17.92	9.88	(.9) 3.12	4.68	-4.24**	5.41	2.12

*P > .05

**P > .01

at the .01 level. Moreover, similar findings were also recorded in spelling, where pre-test results were at the 5.2, level with the post-test results being at the 6.1 level, with a .9 month gain, again suggests a significant improvement between pre and post test scores at the .01 level.

Table 3 provides the pre and post measures ascertained on the PIAT. Generally speaking, students scored somewhat higher on the results of the PIAT than the data ascertained from the WRAT. However, in terms of difference between pre and post tests, the findings between the PIAT and the WRAT proved to be quite similiar. For instance, students improved in reading recognition from the 6.6 level to 9.4 level, which proved to be a statistical significant gain at the .01 level. Reading comprehension improved from their pre-test scores of 6.8, with their post-test scores being at 10.0, a gain of 3.2 which again was at the statistical significant level (.01). In spelling, students did not evidence a significant gain between their entry score (5.3), and their exit score of 6.0. Perhaps, the inability to evidence a significant gain in this area was due, in large part, to the small sample size (n=9). Conversely, gains were made in arithmetic at the significant level (.01), between their entry scores and their exit data. The most striking piece of data emerging from this analysis was the consistency in which students gained at the .01 level on all deminsions of both the WRAT and the PIAT test, except for spelling. As a result, these data tend to support the hypotheis which stated that students would make a statistically significant gain between pre and post test results, if placed into a specialized program to improve their remedial skills.

TABLE III

MEANS, STANDARD DEVIATIONS AND "t" VALUES OF RAW SCORES AND GRADE EQUIVALENTS FOR THE PEABODY INDIVIDUAL ACHIEVEMENT TESTS FOR PRE AND POST MEASURES FOR L.D. STUDENTS

VARIABLE MEASURED	N	PRE-TEST		POST-TEST		GAIN		"t" VALUE	INSTRUCTIONAL MONTHS	
		MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION		MEAN	STANDARD DEVIATION
Reading Recognition	23	(6.6) 51.78	10.43	(9.4) 62.30	12.42	(2.8) 10.52	6.78	-7.81**	5.73	1.78
Reading Comprehension	18	(6.8) 50.44	8.24	(10.0) 60.10	10.60	(3.2) 9.72	5.58	-6.93**	6.16	1.82
Spelling	9	(5.3) 46.44	8.95	(6.0) 49.11	9.40	(.7) 2.67	5.87	-1.64	5.88	1.69
Arithmetic	10	(5.1) 145.50	29.31	(6.1) 163.40	34.32	(1.0) 17.90	12.00	-4.71**	5.55	1.50

*P > .05

**P > .01

Discussion, Implication and Recommendations

This study was designed to determine if learning disabled students, who are placed into a specialized program, can make statistically significant gains academically. The findings would appear to be rather impressive, in that it clearly evidenced that these students can make academic gains when placed into a specialized program. The results become meaningful in developing college level curriculum, and establishing new program procedures for the learning disabled student.

First, this study tends to support that students who have been labeled as non achievers can, in effect, make significant academic achievement if curriculum is developed to meet their cognitive style. This study further suggests that when learning disabled students receive a curriculum based program that is geared for their own modality of learning, that the academic gain made in such programs corralate strongly with similiar gains by normal students. Secondly, this study also tends to suggest that learning disabled students are quite capable of achieving at and in a college level type environment. Granted, some provision must be made for these students to achieve at a level commensurate with their abilities. However, it certainly seems to suggest that if they are given specialized programs, coupled with specialized training, learning disabled students are quite capable of performing competently in a college level environment; especially if the curriculum has been modified toward their individual cognitive styles. Thus, the major findings of this study tend to suggest that specialized programs can make positive and significant differences in meeting the

academic needs of learning disabled students. It further suggests that if students are grouped hemogeniously, and are placed in an environment that caters to their own modality of learning, that one can expect significant gains in their learning.

Generally speaking, these findings tend to suggest that the pre/post academic evaluation of learning disabled students are basically encouraging. As expected, most of the gains are made in the reading area which is the major focus of the Learning Disabled Program. Similar gains were made in all areas to include reading, arithmetic, and spelling where gains were found consistently at the .01 level of confidence. When one considers the severity of the learning disabled group, and the relatively short instruction time spent with these students, then the actual years and months gained strongly suggest the efficiency of a specialized program for L.D. students. Despite these encouraging notes, the following recommendations are offered towards collecting a more valid set of data with learning disabled students. (1) It is recommended that a similar study be replicated, using a larger norm. (2) It is also recommended that a more controlled study be made utilizing both normal and learning disabled students where pre and post tests are given to determine and correlate the level of gain made by both groups. (3) It is also suggested that a study be conducted on the learning disabled group, to determine their own cognitive style, and to what extent ones cognitive style (visual, auditory and bio-cognitive) can be learned in a structuralized program. (4) That a follow-up study be conducted with L.D. students to determine their progress once they have been mainstreamed into regular classes.

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